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## **ABSTRACT**

Compositions and methods for plasticizing polyvinyl chloride polymers where the plasticizers contain fatty acids derived from vegetable oils and the fatty acids are substantially fully esterified with an alcohol (monool or polyol), the fatty acids having unsaturated bonds that are substantially fully epoxidized, and wherein the fatty acids are added substantially randomly to one or more hydroxyl sites on the alcohol. The plasticizers may be added in amounts between about 10 to 230 pph of PVC resin.